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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,614	03/01/2002	Sissy Kyriazidou	BP 2099	7932

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EXAMINER

POKER, JENNIFER A

ART UNIT PAPER NUMBER

2832

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,614	Applicant(s) KYRIAZIDOU ET AL.	
	Examiner Jennifer A. Poker	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

General Status

1. This is a second action on the merits of amendment received October 23, 2003 of application filed March 1, 2002. Claims 1-15 are pending and are being examined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9-12, 14, and 15 rejected under 35 U.S.C. 102(e) as being unpatentable by U.S. Patent Number 6,501,363 to Hwu, et al.

Hwu, et al, discloses a vertical transformer, which is an inductive device, the transformer comprising:

(1) A primary winding, with a plurality of turns, positioned on a first plane and having a terminal in the center and at an exterior end wherein the center terminal is connected to a center terminal of a secondary winding, (Figure 1A) (Abstract) (Column 2, lines 57-67 and Column 3, lines 1-30)

(2) A secondary winding, with a plurality of turns, positioned on a second plane, proximally separated from the primary winding by a dielectric substrate, and having a terminal in

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the center and at an exterior end wherein the center terminal is connected to the center terminal of the primary winding, (Figure 1A) (Abstract) (Column 2, lines 57-67 and Column 3, lines 1-30)

(3) A conductive surface that forms a plane that is parallel to the planes of the primary and second windings, which functions as a ground for the electrical connections, (Figure 1A) (Abstract) (Column 2, lines 57-67 and Column 3, lines 1-30)

(4) Any type of substrate, used as a foundation, and a dielectric layer, such as polyamides, applied over the lower winding (Column 5, lines 30-31)

Applicant defined "admittance" on page 6, lines 26-27 as "the inverse of impedance of the winding at an operating frequency". Hwu, et al, discusses impedances, so it was understood that impedance was simply the inverse of admittance.

Hwu, et al, illustrates in figures 5-9 transformed impedances when a port is connected to a particular impedance load. With reference to FIG. 5, the graph illustrates the transformed impedance of a transformer in accordance with one embodiment having a 200-Ohm impedance load connected to port 2. As shown in FIG. 5, the input impedance of port 1 varies over a wide range of frequencies. As can be seen from the graph of FIG. 5, the 200 Ohm impedance load connected to port 2 is respectively transformed into 1500, 1000 and 800 Ohms for a 4, 6, and 8 micron separation between windings. In addition, the input impedance of port 1 is more uniform. (Column 6, lines 23-37)

Additional figures illustrate the impedance (inverse of admittance) was different between windings.

It can be seen from figure 1A that the windings are not symmetrical due to different number of turns.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent Number 6,501,363 to Hwu, et al.

Hwu, et al, discloses the claimed invention except for a “poly-silicon” material used as a shield below a dielectric material. Hwu, et al, does disclose any type of substrate, which may be used as a foundation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a lower foundation which would increase desired properties of the device, since it has been held to be within general skill of a worker in the art, to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

6. Claims 1-8 are allowable over the prior art.

7. The following is a statement of reasons for the indication of allowable subject matter: no prior art of reference or combination thereof teaches a high on-chip inductor having a primary winding with a first node and a second node and having a first admittance; an auxiliary winding with a first node and a second node and having a second admittance wherein the second admittance is higher than the first; a coupling between the second node of the primary winding and the second node of the auxiliary winding; a coupling between the first node of the primary winding and a first

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leg of an input; a coupling between the second node of the primary winding a second leg of an input
WHEREIN the first node of the auxiliary winding is coupled to receive a PROPORTIONALLY
OPPOSITE REPRESENTATION OF THE FIRST LEG OF THE INPUT SUCH THAT THE
FIRST ADMITTANCE IS DECREASED AT OPERATING FREQUENCIES WHICH
THEREBY INCREASES A QUALITY FACTOR OF THE PRIMARY WINDING.

Response to Arguments

8. Applicant's arguments filed October 23, 2003 have been fully considered but they are not persuasive.

With respect to claim 9, applicant asserts that for the same reasons claim 1 is distinguished over the prior art is further applicable to claim 9. Examiner disagrees. Claim 9 is incredibly broad not including limitations, which rendered claim 1 allowable. Furthermore, in claim 9, applicant includes the limitation, "...auxiliary winding operably coupled to increase a quality factor of the primary winding." It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Claim 9 maintains rejected under previous rejection (also noted above).

With respect to claims 10-15, applicant makes no argument with respect to the rejected subject matter. Claims 10-15, are dependent upon claim 9, which maintains rejection under 35 USC 102(e). Therefore, claims 10-15 maintain their previous rejections (noted above).

Further arguments are addressed below:

- (1) Objection to the specification (title) is withdrawn.
- (2) Rejection under 35 USC 112, second paragraph, to claims 2-5, is withdrawn

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

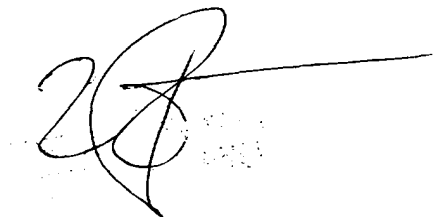
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Poker whose telephone number is 703-305-4037. The examiner can normally be reached on 5:30-4:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on 703-308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

jap
January 7, 2004

A handwritten signature in black ink, appearing to be 'JAP', with a long horizontal line extending to the right.